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## Report of the technical review of the second biennial report of Estonia

According to decision 2/CP.17, developed country Parties are requested to submit their second biennial report by 1 January 2016, that is, two years after the due date for submission of a full national communication. This report presents the results of the technical review of the second biennial report of Estonia, conducted by an expert review team in accordance with the “Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention”.

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## **I. Introduction and summary**

### **A. Introduction**

1. This report covers the centralized technical review of the second biennial report (BR2)<sup>1</sup> of Estonia. The review was organized by the secretariat in accordance with the “Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention”, particularly “Part IV: UNFCCC guidelines for the technical review of biennial reports from Parties included in Annex I to the Convention” (annex to decision 13/CP.20). In accordance with the same decision, a draft version of this report was communicated to the Government of Estonia, which did not provide any comments on this final version of the report.

2. The review took place from 7 to 12 March 2016 in Bonn, Germany, and was conducted by the following team of nominated experts from the UNFCCC roster of experts: Mr. Roberto Acosta Moreno (Cuba), Mr. Oluseyi Adefisan (Nigeria), Mr. Quosay Ahmed Babiker (Sudan), Mr. Pierre Brender (France), Ms. Hanna Brolinson (Sweden), Mr. Zeljko Juric (Croatia), Mr. Seungdo Kim (Republic of Korea), Mr. Audace Ndayizeye (Burundi), Mr. Rostislav Neveceral (Czech Republic), Ms. Nadiia Pustovoitova (Ukraine) and Mr. Can Wang (China). Ms. Brolinson and Mr. Acosta Moreno were the lead reviewers. The review was coordinated by Ms. Inkar Kadyrzhanova and Mr. Davor Vesligaj (UNFCCC secretariat).

### **B. Summary**

3. The expert review team (ERT) conducted a technical review of the information reported in the BR2 of Estonia in accordance with the “UNFCCC biennial reporting guidelines for developed country Parties” (hereinafter referred to as the UNFCCC reporting guidelines on BRs). During the review, Estonia provided additional relevant information in response to questions raised by the ERT.

#### **1. Timeliness**

4. The BR2 was submitted on 31 December 2015, before the deadline of 1 January 2016 mandated by decision 2/CP.17. The common tabular format (CTF) tables were also submitted on 31 December 2015.

#### **2. Completeness, transparency of reporting and adherence to the reporting guidelines**

5. Issues and gaps related to the reported information identified by the ERT are presented in table 1 below. The information reported by Estonia in its BR2 is mostly in adherence with the UNFCCC reporting guidelines on BRs as per decision 2/CP.17.

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<sup>1</sup> The biennial report submission comprises the text of the report and the common tabular format (CTF) tables. Both the text and the CTF tables are subject to the technical review.

Table 1

**Summary of completeness and transparency issues related to mandatory reported information in the second biennial report of Estonia**

<i>Chapter of the biennial report</i>	<i>Completeness</i>	<i>Transparency</i>	<i>Paragraph with recommendations</i>
Greenhouse gas emissions and trends	Complete	Transparent	
Assumptions, conditions and methodologies related to the attainment of the quantified economy-wide emission reduction target	Complete	Transparent	
Progress in achievement of targets	Complete	Mostly transparent	12 and 26
Provision of support to developing country Parties	NA	NA	NA

*Note:* A list of recommendations pertaining to the transparency issues identified in this table is included in chapter III.

*Abbreviation:* NA = not applicable.

## II. Technical review of the reported information

### A. All greenhouse gas emissions and removals related to the quantified economy-wide emission reduction target

6. Estonia has provided a summary of information on greenhouse gas (GHG) emission trends for the period 1990–2013 in its BR2 and CTF tables 1(a)–(d). The BR2 makes reference to the national inventory arrangements, which are explained in more detail in the national inventory report included in Estonia’s 2015 annual inventory submission (section 1.2). The national inventory arrangements were established in accordance with the reporting requirements related to national inventory arrangements contained in the “Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual inventories” that are required by paragraph 3 of the UNFCCC reporting guidelines on BRs. Further, Estonia provided information on the changes in the national inventory arrangements since its first biennial report (BR1). The change are as follows: the establishment of the Estonian Environment Agency (EEA), which was formed in 2013 after the merger of the Estonian Meteorological and Hydrological Institute and the Estonia Environment Information Centre; and the assignment of the responsibility for land use, land-use change and forestry (LULUCF) and related estimates under the Kyoto Protocol to the Forest Monitoring Department of EEA.

7. The information reported in the BR2 on emission trends is consistent with that reported in the 2015 annual inventory submission of Estonia. To reflect the most recently available data, version 2.0 of Estonia’s 2015 annual inventory submission has been used as the basis for discussion in chapter II.A of this review report.

8. During the review, Estonia provided additional information, elaborating on the differences between the GHG emissions reported in the BR1 and BR2. There have been several changes made to the calculation methods used between these two reports. The GHG emission data presented in the BR1 were based on the methodology given in the *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories* and the Intergovernmental Panel on Climate Change (IPCC) *Good Practice Guidance and Uncertainty Management*

in *National Greenhouse Gas Inventories*, whereas the GHG emission data presented in the BR2 were based on the methodology given in the *2006 IPCC Guidelines for National Greenhouse Gas Inventories*. The emissions (in units of carbon dioxide equivalent (CO<sub>2</sub> eq)) presented in the BR2 were based on the global warming potential (GWP) values provided in the IPCC Fourth Assessment Report (AR4), whereas the GWP values used in the BR1 were based on the IPCC Second Assessment Report. The ERT noted the usefulness of this information in enhancing the transparency of reporting on the recalculations performed for GHG emissions to reflect the GWP values from the IPCC AR4.

9. Total GHG emissions<sup>2</sup> excluding emissions and removals from LULUCF decreased by 45.7 per cent between 1990 and 2013, whereas total GHG emissions including emissions or removals from LULUCF decreased by 33.9 per cent over the same period. The decrease in the total GHG emissions can be attributed mainly to carbon dioxide (CO<sub>2</sub>) emissions, which decreased by 46.6 per cent (excluding LULUCF) between 1990 and 2013. Over the same period, emissions of methane (CH<sub>4</sub>) decreased by 40.4 per cent, while emissions of nitrous oxide (N<sub>2</sub>O) decreased by 44.4 per cent. Emissions of hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF<sub>6</sub>) as well as nitrogen trifluoride (NF<sub>3</sub>) were reported as “NO” (not occurring) in 1990, while in 2013, only SF<sub>6</sub> was reported and its emissions accounted for 1.0 per cent of the total GHG emissions. The emission trends were driven mainly by the energy sector, which represented 87.6 per cent of the total GHG emissions in 2013. The major cause of emission reductions is the structural change made in Estonia’s economy since 1991, as well as the efficiency improvement in the use of oil shale and energy efficiency improvements in the energy demand sectors.

10. The ERT noted that, during the period 1990–2013, Estonia’s gross domestic product (GDP) per capita increased by 85.1 per cent, while GHG emissions per GDP and GHG emissions per capita decreased by 65.1 and 35.3 per cent, respectively. The ERT noted a significant decoupling of emissions from economic growth. Table 2 below illustrates the emission trends by sector and some of the economic indicators relevant to GHG emissions for Estonia.

Table 2

**Greenhouse gas emissions by sector and some indicators relevant to greenhouse gas emissions for Estonia for the period 1990–2013**

Sector	GHG emissions (kt CO <sub>2</sub> eq)					Change (%)		Share by sector (%)	
	1990	2000	2010	2012	2013	1990–2013	2012–2013	1990	2013
1. Energy	35 947.08	14 741.90	17 745.61	16 856.11	19 054.27	–47.0	13.0	89.8	87.6
A1. Energy industries	28 850.10	11 916.67	14 241.01	13 088.09	15 345.61	–46.8	17.2	72.1	70.6
A2. Manufacturing industries and construction	2 487.93	575.41	510.69	768.25	740.86	–70.2	–3.6	6.2	3.4
A3. Transport	2 479.10	1 683.38	2 262.68	2 296.62	2 241.92	–9.6	–2.4	6.2	10.3
A4.–A5. Other	2 082.52	540.74	709.43	682.69	704.79	–66.2	3.2	5.2	3.2

<sup>2</sup> In this report, the term “total GHG emissions” refers to the aggregated national GHG emissions expressed in terms of CO<sub>2</sub> eq excluding LULUCF, unless otherwise specified. Values in this paragraph are calculated based on the 2015 inventory submission, version 2.0.

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Sector	GHG emissions (kt CO <sub>2</sub> eq)					Change (%)		Share by sector (%)	
	1990	2000	2010	2012	2013	1990–2013	2012–2013	1990	2013
B. Fugitive emissions from fuels	47.43	25.70	21.80	20.45	21.09	-55.5	3.1	0.1	0.1
C. CO <sub>2</sub> transport and storage	NO	NO	NO	NO	NO	NA	NA	NA	NA
2. IPPU	1 056.14	728.46	524.11	897.25	1 061.84	0.5	18.3	2.6	4.9
3. Agriculture	2 657.26	1 046.92	1 154.51	1 245.72	1 254.05	-52.8	0.7	6.6	5.8
4. LULUCF	-7 636.91	930.97	-4 919.70	-1 463.40	-329.97	-95.7	-77.5	NA	NA
5. Waste	369.10	561.95	466.15	409.05	370.93	0.5	-9.3	0.9	1.7
6. Other	NO	NO	NO	NO	NO	NA	NA	NA	NA
Indirect CO <sub>2</sub>	20.85	19.21	12.84	14.55	13.77	-34.0	-5.4	NA	NA
<b>Total GHG emissions without LULUCF</b>	<b>40 029.57</b>	<b>17 079.23</b>	<b>19 890.38</b>	<b>19 408.14</b>	<b>21 741.09</b>	<b>-45.7</b>	<b>12.0</b>	<b>100.0</b>	<b>100.0</b>
<b>Total GHG emissions with LULUCF</b>	<b>32 392.66</b>	<b>18,010.20</b>	<b>14,970.68</b>	<b>17 944.74</b>	<b>21 411.12</b>	<b>-33.9</b>	<b>19.3</b>	<b>NA</b>	<b>NA</b>
<b>Total GHG emissions without LULUCF, including indirect CO<sub>2</sub></b>	<b>40 050.42</b>	<b>17 098.44</b>	<b>19 903.22</b>	<b>19 422.69</b>	<b>21 754.86</b>	<b>-45.7</b>	<b>12.0</b>	<b>NA</b>	<b>NA</b>
<b>Total GHG emissions with LULUCF, including indirect CO<sub>2</sub></b>	<b>32 413.51</b>	<b>18 029.42</b>	<b>14 983.53</b>	<b>17 959.29</b>	<b>21 424.89</b>	<b>-33.9</b>	<b>19.3</b>	<b>NA</b>	<b>NA</b>
<i>Indicators</i>									
GDP per capita (thousands 2005 USD using PPP)	10.43	11.37	16.61	18.94	19.31	85.1	2.0		
GHG emissions without LULUCF per capita (t CO <sub>2</sub> eq)	25.51	12.23	14.94	14.67	16.50	-35.3	12.4		
GHG emissions without LULUCF per GDP unit (kg CO <sub>2</sub> eq per 2005 USD using PPP)	2.45	1.07	0.90	0.77	0.85	-65.1	10.3		

Sources: (1) GHG emission data: Estonia's 2015 annual inventory submission, version 2.0; (2) GDP per capita data: World Bank.

Note: The ratios per capita and per GDP unit as well as the changes in emissions and the shares by sector are calculated relative to total GHG emissions without LULUCF using the exact (not rounded) values, and may therefore differ from the ratio calculated with the rounded numbers provided in the table.

Abbreviations: GDP = gross domestic product, GHG = greenhouse gas, IPPU = industrial processes and product use, LULUCF = land use, land-use change and forestry, NA = not applicable, NO = not occurring, PPP = purchasing power parity.

## **B. Assumptions, conditions and methodologies related to the attainment of the quantified economy-wide emission reduction target**

11. In its BR2 and CTF tables 2(a)–(f), Estonia reported a description of its target, including associated conditions and assumptions. CTF tables 2(a)–(d) contain the required information in relation to the description of the Party's emission reduction target, such as its base year, gases and sectors covered, GWP values and the approach to counting emissions and removals from the LULUCF sector. Estonia reported in CTF table 2(f) information on the joint European Union (EU) economy-wide emission reduction target. Estonia has committed to achieving the EU target, and it reported on the EU target and its assumptions, conditions and methodologies in its BR2 (see para. 14 below). In line with the EU target, Estonia excluded emissions or removals from the LULUCF sector in defining its quantified economy-wide target.

12. The ERT noted that, in CTF table 2(b), the base year is not reported for  $\text{NF}_3$ , as this gas is not covered by the EU target, but in CTF table 2(c), the cell for the GWP value for this gas is filled in. The ERT recommends that Estonia improve the transparency of its reporting by including consistent information on the description of the EU target in CTF tables 2(b) and 2(c).

13. The ERT also noted that, in CTF tables 2(e)I and 2(e)II, Estonia did not report on the units from the market-based mechanisms under the Convention and other market-based mechanisms. Estonia explained in the footnote under CTF table 2(f) that this information was not provided because the general provisions that allow the use of such units had not been finalized by EU legislation at the time of the preparation of the BR2. Further information on the target is reported in section 3 and table 3.1 of the BR2.

14. For Estonia, the Convention entered into force on 25 October 1994. Under the Convention, Estonia committed to contributing to the achievement of the joint EU economy-wide emission reduction target of 20 per cent below the 1990 level by 2020. The EU offered to move to a 30 per cent reduction on the condition that other developed countries commit to a comparable target and developing countries contribute according to their responsibilities and respective capabilities under a new global climate change agreement.

15. The target for the EU and its member States is formalized in the EU 2020 climate and energy package. This legislative package regulates emissions of  $\text{CO}_2$ ,  $\text{CH}_4$ ,  $\text{N}_2\text{O}$ , HFCs, PFCs and  $\text{SF}_6$  using GWP values from the IPCC AR4 to aggregate the GHG emissions of the EU up to 2020. Emissions and removals from the LULUCF sector are not included in the quantified economy-wide emission reduction target under the Convention. The EU generally allows its member States to use units from the Kyoto Protocol mechanisms as well as new market mechanisms for compliance purposes, subject to a number of restrictions in terms of origin and type of project and up to an established limit. Companies can make use of such units to fulfil their requirements under the EU Emissions Trading System (EU ETS).

16. The EU 2020 climate and energy package includes the EU ETS and the effort-sharing decision (ESD) (see chapter II.C.1 below). Further information on this package is provided in chapter 4 of the BR2. The EU ETS covers mainly point emissions sources in the energy, industry and aviation sectors. For the period 2013–2020, an EU-wide cap has been put in place, with the goal of reducing emissions by 21 per cent below the 2005 level by 2020. Emissions from sectors covered by the ESD are regulated by targets specific to each member State, which leads to an aggregate reduction at the EU level of 10 per cent below the 2005 level by 2020.

17. Under the ESD, Estonia has a target to limit its emission growth to 11 per cent above the 2005 level by 2020 from sectors covered by the ESD (non-ETS sectors). National emission targets for non-ETS sectors for 2020 have been translated into binding quantified annual emission allocations (AEAs) for the period 2013–2020. Estonia’s AEAs follow a linear path from 6,296.99 kt CO<sub>2</sub> eq in 2013 to 6,467.26 kt CO<sub>2</sub> eq in 2020.<sup>3</sup>

18. Furthermore, in its BR2, Estonia reported on its implementation of the target for the second commitment period of the Kyoto Protocol (2013–2020). Estonia reported also on its low carbon development strategy, which aims to decrease GHG emissions by 80.0 per cent by 2050 compared with the 1990 level.

19. The ERT noted that information on the EU target, on Estonia’s target under the ESD and on the EU ETS was reported in two different chapters of the BR2 and in different formats. During the review, Estonia provided clarification of the levels of historical emissions for the sectors covered by the ESD and from the EU ETS sectors for the years 2005–2013. The ERT noted the usefulness of this information in enhancing the transparency of reporting GHG emissions for 2005.

## **C. Progress made towards the achievement of the quantified economy-wide emission reduction target**

20. This chapter provides information on the review of the reporting by Estonia on the progress made in reducing emissions in relation to the target, mitigation actions taken to achieve its target, and the use of units from market-based mechanisms and LULUCF.

### **1. Mitigation actions and their effects**

21. In its BR2 and CTF table 3, Estonia reported on its progress in the achievement of its target and the mitigation actions implemented and planned since its sixth national communications (NC6) and BR1. Estonia has provided comprehensive and well-organized information on its package of mitigation actions introduced to achieve its target. In BR2 CTF table 3, Estonia has reported on 60 policies and measures (PaMs) (46 implemented and 14 planned) compared with the 15 PaMs (13 implemented and 2 planned) reported in the BR1 CTF table 3; this is four times higher. In BR2 CTF table 3, the impacts of mitigation actions (mitigation impacts) are estimated for 40 reported PaMs (or 68.3 per cent) for 2015, 2020, 2025 and 2030. The ERT commends Estonia for providing all these estimates.

22. The BR2 includes information on mitigation actions presented by sector and by gas. Estonia also reported on the use of units from market-based mechanisms and LULUCF (see para. 13 above). Further information on the mitigation actions related to the Party’s target is provided in chapter 4 of the BR2, in CTF table 3 and in this report (see paras. 23–43 below).

23. The ERT noted the improvements in the completeness and transparency of reporting on mitigation actions since the NC6/BR1. In its BR2, Estonia organized the reporting on its mitigation actions, including on the PaMs it has implemented or plans to implement, by sector and by gas.

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<sup>3</sup> European Commission decision 2013/162/EU of 26 March 2013 “on determining member States’ annual emission allocations for the period from 2013 to 2020 pursuant to Decision No. 406/2009/EC of the European Parliament and of the Council” and European Commission implementing decision 2013/634/EU of 31 October 2013 “on the adjustments to member States’ annual emission allocations for the period of 2013 to 2020 pursuant to decision No. 406/2009/EC of the European Parliament and of the Council”.



24. This report highlights the changes made since the publication of the Party's NC6/BR1. In its BR2, Estonia provided information that there were no changes in its domestic institutional arrangements, including institutional, legal, administrative and procedural arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of the progress made towards its target since the publication of its NC6/BR1.

25. The estimated mitigation effects of PaMs were quantified for most PaMs (see para. 21 above). The total effects of the quantified PaMs included in CTF table 3 are as follows: 2,452.8 kt CO<sub>2</sub> eq in 2015 (including 2,252 kt CO<sub>2</sub> eq from implemented PaMs); 3,841.6 kt CO<sub>2</sub> eq in 2020 (including 3,162 kt CO<sub>2</sub> eq from implemented PaMs); 4,662.12 kt CO<sub>2</sub> eq in 2025 (including 3,604 kt CO<sub>2</sub> eq from implemented PaMs); and 4,972.12 kt CO<sub>2</sub> eq in 2030 (including 3,329 kt CO<sub>2</sub> eq from implemented PaMs). However, as the mitigation impact is not quantified for around a third of the reported PaMs, the above-mentioned values may not represent the total contribution to the progress estimated to be made towards the achievement of the economy-wide emission reduction target of all the reported mitigation actions.

26. During the review, Estonia provided additional information, elaborating on the assessment of mitigation impacts of PaMs, in which it was stated that Estonia is making efforts to estimate the mitigation impact of some of the PaMs for which the mitigation impact is not estimated and reported using the notation key "NE" (not estimated), and that it currently has no plans to estimate the mitigation impact of all PaMs. During the review, Estonia also provided information on the PaMs missing in CTF table 3 in order to complete this table, including; the names of mitigation actions; sector(s) affected; GHG(s) affected; objective and/or activity affected; type of instrument; status of implementation; brief description; start year of implementation and implementing entities; and information on mitigation impacts. The ERT recommends that Estonia provide quantitative estimates for the impacts of the remaining PaMs or, if this is not possible, provide the relevant explanations in its next biennial report, to improve transparency.

27. The ERT noted inconsistencies in the information reported in chapter 4 of the BR2 and in CTF table 3. Several PaMs are described exclusively in the textual part of the BR2, such as: (a) reducing GHG and ammonia emissions from the agricultural sector; (b) fostering carbon conservation and sequestration in agriculture and forestry (agriculture sector); (c) support for the establishment of the protection of forests on agricultural land (LULUCF sector); and (d) the EU Common Agricultural Policy Greening measure (agriculture and LULUCF sectors).

28. The BR2 does not include complete and transparent information required by the UNFCCC reporting guidelines on BRs on the assessment of the economic and social consequences of its response measures: the information provided is focused on descriptions of PaMs and estimated costs of PaM implementation, while the economic and social consequences of numerous PaMs are not assessed and reported. In order to improve the completeness and transparency of reporting, the ERT encourages Estonia to provide detailed information, to the extent possible, on the assessment of the economic and social consequences of response measures in its next biennial report submission.

29. The ERT noted that, in its BR2, Estonia did not provide information on the domestic arrangements established for the process of self-assessment of compliance with emission reductions required by science, and on the progress made in the establishment of national rules for taking action against non-compliance with emission reduction targets. During the review, Estonia provided information elaborating on the arrangements established for the process of self-assessment of compliance with emission reductions required by science. Estonia stated that, as a member State of the EU, it monitors progress towards the emission reduction targets, set in compliance with scientific research results, through reporting on

GHG emissions in accordance with EU Regulation 525/2013. Estonia compiles national GHG inventories annually, and reports on PaMs, and projections are compiled every two years.

30. The ERT encourages Estonia to report in its next biennial report submission, to the extent possible, on the domestic arrangements established for the process of self-assessment of compliance with emission reductions in comparison with emission reduction commitments or the level of emission reduction that is required by science. The ERT further encourages Estonia to report, to the extent possible, on the progress made in the establishment of national rules for taking local action against domestic non-compliance with emission reduction targets. The ERT also encourages Estonia to report any other information that Estonia considers relevant to the achievement of the objective of the Convention and suitable for inclusion in its biennial report submission.

31. The key overarching cross-sectoral policy in Estonia is the EU 2020 climate and energy package adopted in 2009, which includes the revised EU ETS and the ESD. This package is supplemented by renewable energy and energy efficiency legislation and legislative proposals on the 2020 targets for CO<sub>2</sub> emissions from cars and vans, the carbon capture and storage directive, and the general programmes for environmental conservation, namely the 7<sup>th</sup> Environment Action Programme and the Clean Air Policy Package (see table 3 below). The renewable energy target has been already achieved in 2012.

32. In operation since 2005, the EU ETS is a cap-and-trade system that covers all significant energy-intensive installations (mainly large point emissions sources such as power plants and industrial facilities), which produce 40–45 per cent of the GHG emissions of the EU. It is expected that the EU ETS will guarantee that the 2020 target (a 21 per cent emission reduction below the 2005 level) will be achieved for sectors under the scheme. The third phase of the EU ETS started in 2013, and the system now includes aircraft operations (since 2012) as well as N<sub>2</sub>O emissions from chemical industries, PFC emissions from aluminium production and CO<sub>2</sub> emissions from industrial processes (since 2013).

33. For allowances allocated to the EU ETS, annual caps were set for the period 2013–2020 (a decrease of the EU cap by 1.7 per cent annually). A total of 46 installations and 3 aircraft operators from Estonia are included in the EU ETS for the period 2013–2020. In 2013, verified emissions of the installations were 15,922.53 kt CO<sub>2</sub> eq, which is 73.2 per cent of the total GHG emissions without LULUCF (21,741.09 kt CO<sub>2</sub> eq in 2013).

34. The ESD became operational in 2013, and covers sectors outside the EU ETS, including transport (excluding domestic and international aviation, and international maritime transport), residential and commercial buildings, agriculture, waste and other sectors, together accounting for 55–60 per cent of the GHG emissions of the EU. The ESD aims to decrease GHG emissions in the EU by 10 per cent below the 2005 level by 2020, and includes binding annual targets for each member State for 2013–2020, which are underpinned by the national policies and actions of the member States. In accordance with the ESD, the GHG emissions from non-ETS sectors in Estonia can increase by 11 per cent above the 2005 level by 2020 (see para. 17 above).

35. The BR2 highlights the EU-wide mitigation actions, such as the inclusion of installations and aircraft operators from Estonia in the EU ETS and the implementation of the ESD. The majority of Estonia's strategies are anchored in or linked to EU policies. Among the most important mitigation actions that could provide a foundation for additional actions that are significant for Estonia to attain the EU-wide 2020 and 2030 emission reduction targets, as well as the indicative target for 2050 (i.e. the EU road map for moving to a low carbon economy in 2050), is the preparation of the Low Carbon Development Strategy. This strategy has the aim to decrease GHG emissions by 80 per cent below the

1990 level by 2050. It is expected that this strategy will be endorsed by the Government of Estonia at the end of 2016.

36. At the national level, Estonia introduced policies to achieve its targets under the ESD and domestic emission reduction targets. One of the key policies reported in the BR2 is the Estonian National Strategy on Sustainable Development – Sustainable Estonia 21, which aims to integrate economic factors with the principles of sustainable development by 2030. More concrete long-term environmental development objectives are formulated in the National Environmental Strategy until 2030, the Environmental Action Plan for 2007–2013 and the Government Action Programme for 2011–2015.

37. The National Reform Programme Estonia 2020 was approved by the Government in 2011, and has been updated annually with the last update in April 2014. The programme sets three main targets regarding GHG emissions: (a) GHG emissions under the ESD should not exceed 6,269.00 kt CO<sub>2</sub> eq in 2020 (in accordance with the target set for Estonia under the ESD); (b) a 25.0 per cent share of renewable energy in final energy consumption by 2020; and (c) maintaining the final energy consumption at the 2010 level (about 118.00 PJ).

38. There are several other climate-related sectoral documents, such as the National Development Plan for the Energy Sector 2030+, the Climate Change Mitigation and Adaptation Plan in the agriculture sector for 2012–2020, the Estonian Forestry Development Programme until 2020 and the Estonian Waste Management Plan for 2014–2020.

39. Estonia's GHG mitigation policies concern all sectors; however, priority is given to the energy sector, which is responsible for the majority of GHG emissions (with a 87.6 per cent share of total GHG emissions in 2013). As oil shale is Estonia's main domestic fuel, the National Development Plan for the Use of Oil Shale for 2016–2030 was approved by the Government of Estonia in December 2015 in order to ensure the application of economic, security and environmental considerations in the use of this fuel. On the basis of this plan, a limit on the annual amount of oil shale extracted is set at 20.00 Mt per year, which is the same as the limit level defined in the previous plan for 2008–2015. The use of environmentally sound technologies in oil shale-based power development and production is an issue of growing importance in Estonia.

40. Modernization of power plants is under way in Estonia, and may lead to a decrease in the CO<sub>2</sub> emission intensity of electricity production. Improvements in the efficiency of use of oil shale production units are expected to result in a decrease of GHG emissions by 632.70 kt CO<sub>2</sub> eq (for two units with an individual capacity of 215 MW each) and 631.20 kt CO<sub>2</sub> eq (for one unit with a capacity of 300 MW) by 2020. Measures addressing support for renewable and efficient electricity production based on combined heat and power should deliver further reductions, estimated at 1,010.10 kt CO<sub>2</sub> eq by 2020.

41. With regard to the non-energy sectors, GHG emission reductions were estimated for a few PaMs in the industrial processes and product use (IPPU) sector, and in the agriculture and waste sectors. The largest emission reductions by 2020 are expected from: the improved supply and use of renewable energy sources, by-products, wastes, residues and other non-food raw materials (4.50 kt CO<sub>2</sub> eq) in agriculture; waste recycling or reuse (3.20 kt CO<sub>2</sub> eq); and the bans and obligations on fluorinated GHGs (1.60 kt CO<sub>2</sub> eq).

42. The BR2 highlights the additional domestic mitigation actions that are under development and which add to ongoing measures, such as the renovation of boiler houses and heat networks, fuel economy in transport, the promotion of eco-driving and reduction of private vehicle use, traffic system improvements and public transport system development. Among those mitigation actions that provide a foundation for significant additional actions, the renovation of heat networks has the greatest mitigation potential (an

estimated reduction of 184.40 kt CO<sub>2</sub> eq by 2020). Table 3 below provides a concise summary of the key mitigation actions and estimates of their mitigation effects reported by Estonia to achieve its target.

Table 3

**Summary of information on mitigation actions and their impacts reported by Estonia**

<i>Sector affected</i>	<i>List of key mitigation actions</i>	<i>Estimate of mitigation impact by 2020 (kt CO<sub>2</sub> eq)</i>	<i>Estimate of mitigation impact by 2030 (kt CO<sub>2</sub> eq)</i>
Policy framework and cross-sectoral measures	European Union Emissions Trading Scheme		
Energy, including:			
Renewable energy	Support for renewable and efficient combined heat and power based electricity production	1 010.10	1 154.10
Energy efficiency	Improvement of efficiency in oil shale use	1 263.90	575.40
Transport sector	Increasing the share of biofuels	244.00	501.60
Industrial processes and product use	Bans and obligations from Regulation 517/2014 on fluorinated greenhouse gases	1.60	77.20
Agriculture	Facilitating the supply and use of renewable energy sources, by-products, waste, residues and other non-food raw materials	4.50	11.30
Waste	Waste recycling or reuse	3.20	14.90

*Note:* The estimates of mitigation impact are estimates of emissions of carbon dioxide or carbon dioxide equivalent avoided in a given year as a result of the implementation of mitigation actions.

## 2. Estimates of emission reductions and removals and the use of units from the market-based mechanisms and land use, land-use change and forestry

43. Estonia reported in its BR2 and CTF table 4 only on total GHG emissions excluding LULUCF relating to its target for 1990 and the period of 2010–2013. For 2013, annual total GHG emissions excluding LULUCF are 21,754.86 kt CO<sub>2</sub> eq, or 45.7 per cent below the 1990 level. Estonia reported in its BR2 that the contribution of emissions or removals from LULUCF in the base year level is excluded from the EU joint emission reduction target and not reported in CTF tables 4, 4(a)I and 4(a)II. No quantitative information on the use of market-based mechanisms is given in CTF tables 4 and 4(b).

44. Across the EU, it is expected that the 2020 EU target will be achieved without a need to make use of units from market-based mechanisms. However, it is explained in the BR2 that the compliance assessment under the ESD for 2013 will take place during 2016, following which the use of units under the ESD could be reported in the Party's next biennial report submission. At the time of the review, Estonia stated that it does not plan to use the market-based mechanisms under the Convention in order to fulfil its national annual targets under the ESD for the period 2013–2020.

45. Table 4 below illustrates Estonia's total GHG emissions, the contribution of LULUCF and the use of units from market-based mechanisms to achieve its target.

Table 4  
**Summary of information on the use of units from market-based mechanisms and land use, land-use change and forestry as part of the reporting on the progress made by Estonia towards the achievement of its target**

<i>Year</i>	<i>Emissions excluding LULUCF (kt CO<sub>2</sub> eq)</i>	<i>Contribution from LULUCF (kt CO<sub>2</sub> eq)<sup>a</sup></i>	<i>Emissions including contribution from LULUCF (kt CO<sub>2</sub> eq)</i>	<i>Use of units from market-based mechanisms (kt CO<sub>2</sub> eq)<sup>b</sup></i>
1990	40 050.52	NA	NA	NA
2010	19 903.22	NA	NA	NA
2011	20 478.52	NA	NA	NA
2012	19 422.69	NA	NA	NA
2013	21 754.86	NA	NA	NA

*Sources:* Estonia's second biennial report and common tabular format tables 1, 4, 4(a)I, 4(a)II and 4(b).

*Abbreviations:* LULUCF = land use, land-use change and forestry, NA = not applicable.

<sup>a</sup> The European Union's unconditional commitment to reduce greenhouse gas emissions by 20 per cent below the 1990 level by 2020 does not include emissions/removals from LULUCF.

<sup>b</sup> Estonia reported that as the compliance assessment for the first year (2013) under the effort-sharing decision will take place in 2016, any potential use of units for the first year will only take place in 2016 and therefore it is not reported in the second biennial report.

46. To assess the progress towards the achievement of the 2020 target, the ERT noted that Estonia's target for sectors not covered by the EU ETS is to limit emission growth at the level of 11 per cent above the 2005 level (see para. 17 above). In 2013, Estonia's emissions from the sectors not covered by the EU ETS are 5,831.12 kt CO<sub>2</sub> eq, while the AEAs were allocated in the amount of 6,296.99 kt CO<sub>2</sub> eq. The ERT noted that Estonia's emissions are below the allocated amount and it is making progress towards its target.

47. The ERT noted the progress made by Estonia, reported in its BR2 in comparison with its NC6/BR1. Estonia has implemented PaMs that target all relevant sectors and gases. Estonia does not currently plan to use the market-based mechanisms under the Convention in order to fulfil its national annual targets under the ESD for the period 2013–2020. In addition, the ERT noted that Estonia does not account for the contribution from LULUCF to achieve its target.

48. During the review, Estonia provided information on the split of historical and projected GHG emissions under both the EU ETS and the non-ETS sectors. The ERT noted the usefulness of this information for the review of Estonia's progress towards achieving its 2020 target under the ESD.

### 3. Projections

49. Estonia reported in its BR2 and CTF table 6(a) updated projections for 2020 and 2030 relative to actual inventory data up to 2013 under the 'with measures' (WEM) scenario. Projections are presented on a sectoral basis, using the same sectoral categories as used in the chapter on mitigation actions, and on a gas-by-gas basis for the following GHGs: CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, PFCs, HFCs and SF<sub>6</sub> (treating PFCs and HFCs collectively in each case). Projections are also presented in an aggregated format for each sector, as well as for a Party total, using GWP values from the IPCC AR4. Emission projections related to fuel sold to ships and aircraft engaged in international transport were reported separately and were not included in the totals. Estonia reported on factors and activities influencing

emissions for each sector. Further information on the projections is provided in chapter 5 of the BR2.

50. In addition to the WEM scenario, Estonia reported in the BR2 and CTF table 6(c) the ‘with additional measures’ (WAM) scenario. The projections are presented by sector and by gas in the same way as for the WEM scenario, for 2020 and 2030. Estonia provided information on the changes since the submission of its NC6/BR1 in the assumptions, methodologies, models and approaches used and on the key variables and assumptions used in the preparation of the projection scenarios using CTF table 5 (see paras. 67–68 below).

51. The ERT noted that the transparency of the information provided about the models used in the projection of the energy sector could be enhanced. During the review, Estonia provided additional information, elaborating on the Balmorel model, which was used for analysing the electricity and combined heat and power system as well as on the LEAP model. The ERT encourages Estonia to enhance the transparency of its information on the models and approaches used in its reporting on projections by providing more detailed information on the methodology, especially the strengths and weaknesses of the model or approach used, and how the model used accounts for any overlap or synergies that may exist between different PaMs.

52. The ERT noted that the projections of annual GDP growth rates for the energy sector are different from those in the waste sector. During the review, Estonia provided an explanation for using two different GDP growth rates (see paras. 57–58 below). The ERT noted the usefulness of this information in enhancing the transparency of the reported assumptions and suggests that Estonia harmonize the use of GDP growth rates between different sectors in its next biennial report submission.

53. Estonia also provided information on the sensitivity analysis, as reported in chapter 5.2.7 of the BR2. However, information on the sensitivity of projections to the underlying main assumptions used in the projections (table 5.1 in the BR2) is not reported. The ERT encourages Estonia to enhance the transparency of reporting in its next biennial report submission by discussing qualitatively and, where possible, quantitatively the effects of different key assumptions on the reported projections.

#### Overview of projection scenarios

54. The WEM scenario reported by Estonia includes all PaMs that have been implemented; these are presented in the PaMs chapter of the BR2 and in CTF table 3. Estonia also reported on the WAM scenario, which includes PaMs that are planned but not currently implemented. The definitions indicate that the scenarios have been prepared according to the “Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications”.

#### Methodology and changes since the previous submission

55. The methodology used in the BR2 was updated from that used for the preparation of the emission projections for the NC6/BR1. Estonia reported supporting information, further explaining the methodologies and the changes made since the NC6/BR1. Detailed projection methodologies are provided for each sector in chapter 5.1 of the BR2.

56. To prepare its projections, Estonia relied on the following key underlying assumptions: population trends, GDP growth rate, energy prices, energy consumption, number of livestock, solid waste generation and nitrogen input from application of synthetic fertilizers, as reported in CTF table 5. These assumptions have been updated on the basis of the most recent economic development data known at the time of the reporting on projections.

57. The ERT noted an inconsistency between the GDP values reported in CTF table 5 and the values reported in BR2 table 5.2, regarding the comparison of assumptions used in the NC6/BR1 and the BR2. During the review, Estonia explained why the reported GDP values differ. The GDP values reported in BR2 table 5.2 originate from the European Commission document entitled “Recommended parameters for reporting on GHG projections in 2015”. These GDP projections were used in the projections for the waste sector. The GDP values in CTF table 5 originate from the National Development Plan for the Energy Sector 2030+, and were used in the energy sector projections.

58. The reason for using two different GDP values in the projections was connected to the parameters used for the energy sector projections, which were taken also from the National Development Plan for the Energy Sector 2030+ and used in CTF table 5. Using the GDP values proposed by the European Commission would have resulted in a conflict between the energy sector’s projection parameters and GHG projections. This conflict was not present in the waste sector, and it was possible to use the GDP values proposed by the European Commission, which were released after the National Development Plan for the Energy Sector 2030+. The ERT encourages Estonia to provide in its next biennial report the relevant explanations with regard to the use of different underlying GDP values, as applicable.

59. Sensitivity analyses were carried out separately for the energy, IPPU and waste sectors. The analyses excluded the agriculture and LULUCF sectors. The uncertainty of oil shale production (which is defined by the shale oil producing companies) affects the projected GHG emissions from the energy sector. Under the sensitivity analysis, emissions from the energy sector could be 15.3 per cent lower than under the WEM scenario for 2030, if the shale oil production plans are not fully realized. If ammonia production does not resume in Estonia because of the low global market prices, then GHG emissions from the IPPU sector could be about 21.0 per cent below the projected level under the WEM scenario for 2030. In the waste sector, a sensitivity analysis was conducted for the amount of burned solid waste, in which GHG emissions in 2030 may increase by 58.00 kt CO<sub>2</sub> eq compared with emissions under the WEM scenario.

#### Results of projections

60. Estonia’s total GHG emissions excluding LULUCF in 2020 and 2030 are projected to be 21,903.45 and 17,715.01 kt CO<sub>2</sub> eq, respectively, under the WEM scenario, which represents a decrease of 45.3 and 55.7 per cent, respectively, below the 1990 level. Under the WAM scenario, emissions in 2020 and 2030 are projected to be around 21,209.77 and 16,048.22 kt CO<sub>2</sub> eq, respectively, which represents a decrease of 47.0 and 59.9 per cent, respectively, below the 1990 level. The 2020 projections demonstrate significant emission reductions and suggest that Estonia will continue contributing to the achievement of the EU target under the Convention (see para. 16 above).

61. Estonia’s target for the emissions from sectors covered by the ESD (non-ETS sectors) is to limit its emission growth at 11 per cent above the 2005 level by 2020. According to the projections under the WEM scenario, emissions from non-ETS sectors are estimated to reach 5,709.47 kt CO<sub>2</sub> eq (excluding domestic aviation) by 2020. For Estonia, the AEAs reflecting its national emission target for the non-ETS sectors change following a linear path from 6,296.99 kt CO<sub>2</sub> eq in 2013 to 6,467.26 kt CO<sub>2</sub> eq in 2020. Comparing the AEAs and projected emission level for 2020, the ERT noted that this suggests that Estonia expects to meet its target under the WEM scenario.

62. According to the projections presented by sector, the most significant GHG emission reductions under the WEM scenario from 1990 to 2020 will occur in the energy sector (16,862.14 kt CO<sub>2</sub> eq or 50.4 per cent) and the agriculture sector (1,321.39 kt CO<sub>2</sub> eq or 49.7 per cent) followed by the waste sector (105.81 kt CO<sub>2</sub> eq or 28.7 per cent). GHG

emissions from the IPPU sector are projected to increase by 277.01 kt CO<sub>2</sub> eq (26.2 per cent) above the 1990 level by 2020.

63. If additional measures are considered (i.e. under the WAM scenario), the pattern of the sectoral proportions remains almost the same, whereby the energy sector remains the most prominent source of reductions (51.5 per cent). In the transport subsector, projected emission reductions (17.9 per cent) by 2020 under the WAM scenario are almost four times higher than the projected emission reductions (4.6 per cent) under the WEM scenario. This indicates the potentially significant mitigation impact of the additional actions in the transport sector by 2020.

64. The most significant GHG emission reductions under the WEM scenario from 1990 to 2030, in absolute terms, are projected to occur in the energy sector (20,897.28 kt CO<sub>2</sub> eq (62.4 per cent), followed by the agriculture sector where they are expected to reduce by 1,285.98 kt CO<sub>2</sub> eq (48.4 per cent) and the waste sector where they are expected to reduce by 195.64 kt CO<sub>2</sub> eq (53.0 per cent). Emissions from the IPPU sector are projected to increase by 167.17 kt CO<sub>2</sub> eq (15.8 per cent).

65. The projections to 2030 under the WAM scenario indicate that the pattern of the sectoral proportions remains almost the same, whereby the energy sector remains the most prominent source of reductions (64.6 per cent). By 2030, the emissions in the transport subsector are projected to decrease by 42.0 per cent below the 1990 level under the WAM scenario, compared with a decrease of only 4.1 per cent projected under the WEM scenario.

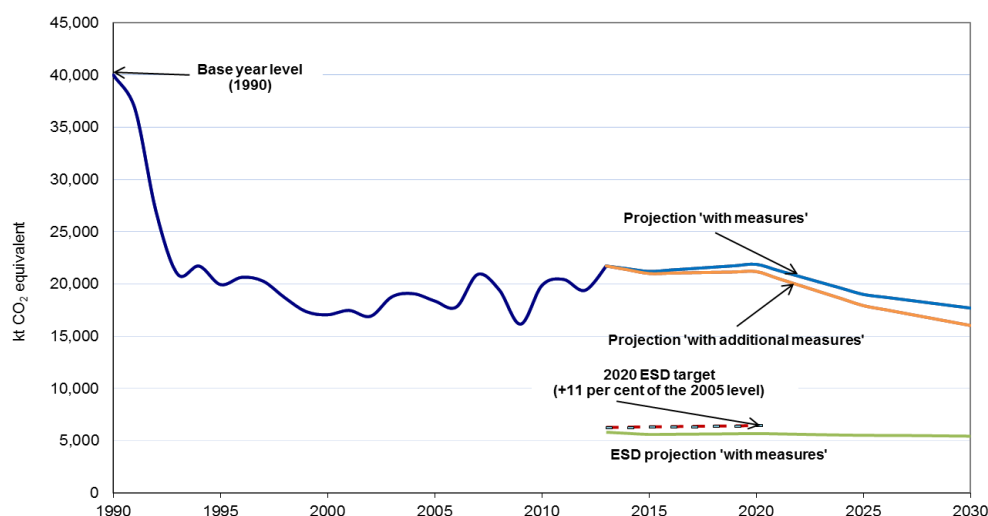
66. According to the projections presented by gas, reductions in CO<sub>2</sub> emissions are expected to contribute the most to the Party's overall emission reductions. Under the WEM scenario, reductions in CO<sub>2</sub> emissions will make up approximately 94.1 per cent of the aggregate net GHG emission reductions below the 1990 level (17,060.89 kt CO<sub>2</sub> eq) by 2020, followed by CH<sub>4</sub> with 3.8 per cent (689.40 kt CO<sub>2</sub> eq) and N<sub>2</sub>O with 3.2 per cent (584.89 kt CO<sub>2</sub> eq). Under the WAM scenario, the shares by gas remain the same, where reductions in CO<sub>2</sub> emissions will make up approximately 94.1 per cent of the aggregate GHG emission reductions below the 1990 level (17,713.84 kt CO<sub>2</sub> eq) by 2020, followed by CH<sub>4</sub> with 3.8 per cent (720.12 kt CO<sub>2</sub> eq) and N<sub>2</sub>O with 3.2 per cent (594.88 kt CO<sub>2</sub> eq).

67. Under the WEM scenario, reductions in CO<sub>2</sub> emissions, excluding LULUCF, will make up approximately 94.8 per cent of the aggregate GHG emission reductions below the 1990 level (21,147.79 kt CO<sub>2</sub> eq) by 2030, followed by CH<sub>4</sub> with 3.4 per cent (768.98 kt CO<sub>2</sub> eq) and N<sub>2</sub>O with 2.4 per cent (531.94 kt CO<sub>2</sub> eq). Reduction trends for different GHGs under the WAM scenario projected for 2030 are almost similar to the ones for the WEM scenario.

68. The projected emission levels under the different scenarios and Estonia's quantified economy-wide emission reduction target are presented in the figure below.



## Greenhouse gas emission projections



*Sources:* (1) Data for the years 1990–2013: Estonia’s 2015 annual inventory submission, version 2.0; total GHG emissions excluding land use, land-use change and forestry; (2) Data for the years 2013, 2020 and 2030: Estonia’s second biennial report; total GHG emissions excluding land use, land-use change and forestry.

*Abbreviations:* ESD = effort-sharing decision, GHG = greenhouse gas.

69. The ERT noted that Estonia reported a comparison of the projections in the NC6/BR1 and those in the BR2, where the assumptions for population and GDP growth rates were updated in the BR2 compared with the NC6/BR1. Total GHG emissions under the WEM and WAM scenarios for both 2020 and 2030 are higher in the BR2 than in the NC6/BR1. For example, the difference in the projected for 2020 under the WEM scenario in the BR2 compared with the projections in the NC6/BR1 is a 28.4 per cent increase and the difference in the projections for 2020 under the WAM scenario is 25.1 per cent higher than the projections reported in the NC6/BR1 for the same year. The ERT noted these differences, while also recognising that the difference associated with the update of the inventories, including the use of the new guidelines and GWP values accounts for an increase of less than 1.4 per cent for the years 1990 to 2010.

#### 4. Assessment of aggregate effects of policies and measures

70. The ERT acknowledged information submitted by Estonia on the aggregate effects of planned PaMs that is calculated as the difference under the WEM and WAM scenarios in terms of emissions avoided or sequestered. The total effects for 2020 and 2030 are equal to 693.70 and 1,666.80 kt CO<sub>2</sub> eq, respectively, and the sum of the evaluation of planned PaMs reported in CTF table 3 account for approximately 98 per cent of these totals.

### D. Provision of financial, technological and capacity-building support to developing country Parties

71. Estonia is not a Party included in Annex II to the Convention and is therefore not obliged to adopt measures and fulfil obligations as defined in Article 4, paragraphs 3, 4 and 5, of the Convention. However, Estonia provided quantitative information on its provision of financial support to developed and developing country Parties in CTF tables 7,

7(a) and 7(b). The ERT commends Estonia for reporting this information and suggests that it continue to do so in the next biennial report submission.

72. The ERT noted that the information on financial support allocated in 2013 and 2014 through multilateral and bilateral channels was directed towards mitigation and cross-cutting activities and this information was reported in euros without converting the amounts into United States dollars.

### III. Conclusions

73. The ERT conducted a technical review of the information reported in the BR2 and CTF tables of Estonia in accordance with the UNFCCC reporting guidelines on BRs. The ERT concludes that the reported information is mostly in adherence with the UNFCCC reporting guidelines on BRs and provides an overview on: emissions and removals related to the EU quantified economy-wide emission reduction target; assumptions, conditions and methodologies related to the attainment of the target; and progress made by Estonia in achieving its target under the ESD.

74. In 2013, Estonia's total GHG emissions excluding LULUCF related to its quantified economy-wide emission reduction target were estimated to be 45.7 per cent below its 1990 level, whereas total GHG emissions including LULUCF were 33.9 per cent below its 1990 level. Such significant emission reductions were driven by restructuring of the economy and efficiency improvement in the energy industry and energy demand sectors.

75. Under the Convention, Estonia is committed to contributing to the achievement of the joint EU quantified economy-wide target of a 20 per cent reduction in emissions below the 1990 level by 2020. The target covers all sectors and the gases CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs and SF<sub>6</sub>, expressed using GWP values from the IPCC AR4. Emissions and removals from the LULUCF sector are not included in the quantified economy-wide emission reduction target under the Convention. The EU generally allows its member States to use units from the Kyoto Protocol mechanisms as well as new market mechanisms for compliance purposes, subject to a number of restrictions in terms of origin and type of project and up to an established limit. Companies can make use of such units to fulfil their requirements under the EU ETS.

76. Under the ESD, Estonia has a target to limit the emission growth to 11 per cent above the 2005 level by 2020. Estonia's AEAs, which correspond to its national emission target for non-ETS sectors change linearly from 6,296.99 kt CO<sub>2</sub> eq in 2013 to 6,467.26 kt CO<sub>2</sub> eq in 2020.

77. The key overarching cross-sectoral policy in Estonia is the EU 2020 climate and energy package, which includes the EU ETS and ESD. This package is supplemented by the renewable energy target, which was already achieved in 2012, and the energy efficiency policies by 2020. Estonia's main national policy framework relating to energy and climate change is the National Development Plan for the Energy Sector 2030+, which covers the policies with the highest mitigation effects, including efficiency improvements in the use of oil shale, support for renewable and efficient electricity production based on combined heat and power and increasing the share of biofuels in transport.

78. For 2013, Estonia reported in CTF table 4 total GHG emissions excluding LULUCF at 21,754.86 kt CO<sub>2</sub> eq. Estonia reported that it does not plan to use the market-based mechanisms to achieve its target under the ESD, as their use cannot be quantified at the moment, because the compliance assessment for the first year (2013) under the ESD and for any potential use of units for 2013 will only take place in 2016. The contribution of

emissions or removals from LULUCF is excluded from the EU joint emission reduction target.

79. The GHG emission projections provided by Estonia in its BR2 include the WEM and WAM scenarios. Under these two scenarios, total GHG emissions are projected to be 45.3 and 47.0 per cent below the 1990 level in 2020, respectively. For the non-ETS sectors, emissions are estimated to reach 5,709.47 kt CO<sub>2</sub> eq (excluding domestic aviation) by 2020 under the WEM scenario. Noting that its AEAs should reach the level of 6,467.26 kt CO<sub>2</sub> eq in 2020 under the WEM scenario, Estonia expects to meet its target under the ESD.

80. In the course of the review, the ERT recommended that Estonia improve its adherence to the UNFCCC reporting guidelines on BRs in its next biennial report by improving the transparency of its reporting, namely:<sup>4</sup>

(a) Include consistent information on the description of the EU target in CTF tables 2(b) and 2(c) (see para.12 above);

(b) Provide quantitative estimates for the impacts of the PaMs or, if this is not possible, providing the relevant explanations (see para. 26 above).

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<sup>4</sup> The recommendations are given in full in the relevant chapters of this report.

## Annex

### Documents and information used during the review

#### A. Reference documents

“UNFCCC biennial reporting guidelines for developed country Parties”. Annex to decision 2/CP.17. Available at

<<http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf#page=4>>.

“Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual greenhouse gas inventories”. Annex to decision 24/CP.19. Available at

<<http://unfccc.int/resource/docs/2013/cop19/eng/10a03.pdf#page=2>>.

“Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications”.

FCCC/CP/1999/7. Available at <<http://unfccc.int/resource/docs/cop5/07.pdf>>.

“Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention”. Annex to decision 13/CP.20. Available at

<<http://unfccc.int/resource/docs/2014/cop20/eng/10a03.pdf>>.

FCCC/ARR/2014/EST. Report on the individual review of the annual submission of Estonia submitted in 2014. Available at <<http://unfccc.int/resource/docs/2015/arr/est.pdf>>.

FCCC/IDR.6/EST. Report of the technical review of the sixth national communication of Estonia. Available at <<http://unfccc.int/resource/docs/2015/idr/est06.pdf>>.

FCCC/TRR.1/EST. Report of the technical review of the first biennial report of Estonia. Available at <<http://unfccc.int/resource/docs/2015/trr/est01.pdf>>.

2015 greenhouse gas inventory submission of Estonia. Available at <[http://unfccc.int/national\\_reports/annex\\_i\\_ghg\\_inventories/national\\_inventories\\_submissions/items/8812.php](http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/8812.php)>.

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<[http://unfccc.int/files/national\\_reports/biennial\\_reports\\_and\\_iar/submitted\\_biennial\\_reports/application/pdf/br1\\_12022014\\_est.pdf](http://unfccc.int/files/national_reports/biennial_reports_and_iar/submitted_biennial_reports/application/pdf/br1_12022014_est.pdf)>.

Common tabular format tables of the first biennial report of Estonia. Available at

<[http://unfccc.int/files/national\\_reports/biennial\\_reports\\_and\\_iar/submitted\\_biennial\\_reports/application/pdf/est\\_2014\\_v2.0.pdf](http://unfccc.int/files/national_reports/biennial_reports_and_iar/submitted_biennial_reports/application/pdf/est_2014_v2.0.pdf)>.

Second biennial report of Estonia. Available at

<[http://unfccc.int/files/national\\_reports/biennial\\_reports\\_and\\_iar/submitted\\_biennial\\_reports/application/pdf/br2\\_est\\_31122015.pdf](http://unfccc.int/files/national_reports/biennial_reports_and_iar/submitted_biennial_reports/application/pdf/br2_est_31122015.pdf)>.

Common tabular format tables of the second biennial report of Estonia. Available at

<[http://unfccc.int/files/national\\_reports/biennial\\_reports\\_and\\_iar/submitted\\_biennial\\_reports/application/pdf/est\\_2016\\_v1.0\\_formatted.pdf](http://unfccc.int/files/national_reports/biennial_reports_and_iar/submitted_biennial_reports/application/pdf/est_2016_v1.0_formatted.pdf)>.

**B. Additional information used during the review**

Responses to questions during the review were received from Ms. Cris-Tiina Turkson (Ministry of Environment).

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